Claims

1. A method for producing a winding support (14) for an electrical machine (10) is proposed, in which the winding support has a plurality of pole teeth (20), and adjacent pole teeth (201, 208) between them define at least one slot (211), which is filled with at least one winding (18) each, and the pole teeth (201, 208), before being filled, have an installation position relative to one another for installation into the electrical machine (10), characterized in that at least one of the pole teeth (201, 208), which define a slot (211), is bent, before the filling of the at least one slot (211) with the winding (181), by a force action (36) into a filling position, so that the cross- sectional area of the at least one slot (211) that it defines is increased; that then the winding (181) is placed in the slot (211); and that next, the at least one of the adjacent pole teeth (201, 208) is put out of the filling position into the installation position.

2. The method as defined by claim 1, characterized in that the force action (36) engages the pole teeth (20) directly.

3. The method as defined by claim 1 or 2, characterized in that pole teeth (20) are bent successively into the filling position and after the filling of the slots (21) with windings (18) are put in the installation position.

4. The method as defined by one of the foregoing claims, characterized in that the at least one pole tooth (201), which is bent, is bent in the elastic region, and after the insertion of the winding (18), by withdrawal of the force action (36), returns to the installation position by means of its intrinsic elasticity.

5. The method as defined by one of the foregoing claims, characterized in that the at least one pole tooth (201), which is bent open, is bent in the plastic region and after the insertion of the winding (18), by a reversal of the force action (36), is returned to the installation position by plastic deformation.

6. The method as defined by one of the foregoing claims, characterized in that directly adjacent pole teeth (201, 208) are bent open into a filling position by increasing the spacing (34) between them.

7. The method as defined by one of the foregoing claims, characterized in that pole teeth (201, 203), between which at least one further pole tooth (202) is disposed, are bent open by increasing the spacing (34) between them.

8. The method as defined by one of the foregoing claims, characterized in that at least the pole teeth (201, 208; 203, 204) of two paired slots (211, 214) that receive at least one winding (181) are bent open and then the slots (211, 214) are filled with the winding (181); that the pole teeth (201, 208; 203, 204) are returned to the installation position; and that in the clockwise or counterclockwise direction the pole teeth (201, 202; 204, 205) of respective following paired slots (212, 215) that receive at least one winding (182) are bent open, until the winding support (14) has been completely provided with windings (18).

9. The method as defined by one of the foregoing claims, characterized in that the pole teeth (20) each include one tooth neck (22) and one tooth head (24), and the tooth heads (24) have portions (28) which protrude transversely to the tooth necks (22) and which define undercuts

(30) of undercut slots (21) for receiving windings (18) and form utility slits (32), and for insertion of the windings (18), essentially at least the width (34) of the utility slit (32) is increased.

10. A winding support (14), produced by the method as defined by one of the foregoing claims.

11. The winding support (14) as defined by claim 10, characterized in that at least the transition from the slot base (25) located between two pole teeth (20) to the pole teeth (20) is embodied as essentially sharp-edged.

12. The winding support (14) as defined by claim 10 or 11, characterized in that the pole teeth (20) each include one tooth neck (22) and one tooth head (24), and the tooth heads (24) have portions (28), protruding transversely to the tooth necks (22), that form undercuts (30) of undercut slots (21), and the transitions from the tooth necks (22) to the undercuts (30) are embodied as essentially sharp-edged.

13. The winding support (14) as defined by one of claims 10 through 12, characterized in that the winding support (14) is an armature of an internal rotor or a stator of an external rotor, and the pole teeth (20) are oriented radially outward.

14. An electrical machine (10) having a winding support (14) as defined by one of claims 10 through 13.

15. An apparatus (42) for performing the method as defined by one of claims 1 through 9, characterized in that the apparatus (42) has at least one device (38, 40) for bending at least one pole tooth (20).

16. The apparatus (42) as defined by claim 15, characterized in that the apparatus (42) has at least one device (38, 40) for bending two adjacent pole teeth (201, 208; 203, 204).

17. The apparatus (42) as defined by claim 15 or 16, characterized in that the apparatus (42) has at least one device (38, 40) which bends two pole teeth (201, 208; 203, 204) of two slots (211, 214) into which one winding (18) is inserted.